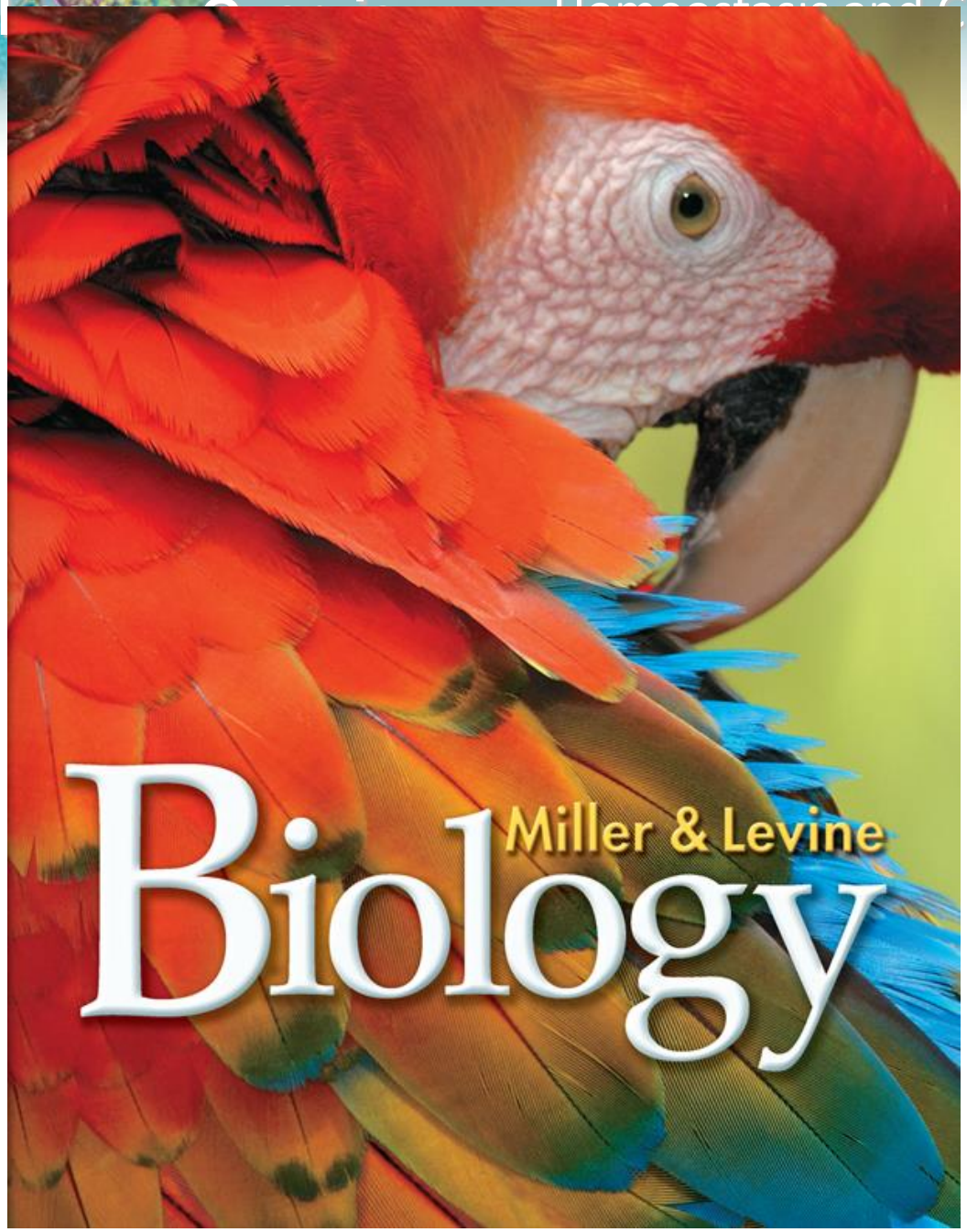


7.4 homeostasis and organization

The Cell as an Organism

Unicellular organisms dominate life on Earth.

Unicellular organisms include both prokaryotes and eukaryotes.

Prokaryotes, especially bacteria, live almost everywhere.

Many eukaryotes also spend their lives as single cells.

- Some types of algae are unicellular.
- Yeasts, or unicellular fungi, are also widespread.

The Cell as an Organism

Unicellular organisms must maintain **homeostasis** - relatively constant internal physical and chemical conditions.

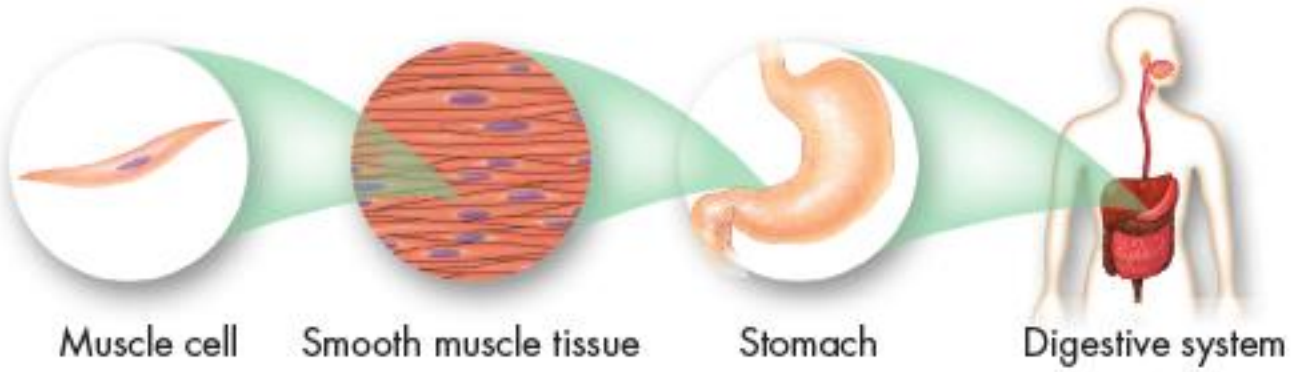
To maintain homeostasis, unicellular organisms grow, respond to the environment, transform energy, and reproduce.

Multicellular Life

The cells of multicellular organisms become specialized for particular tasks and communicate with one another to maintain homeostasis.

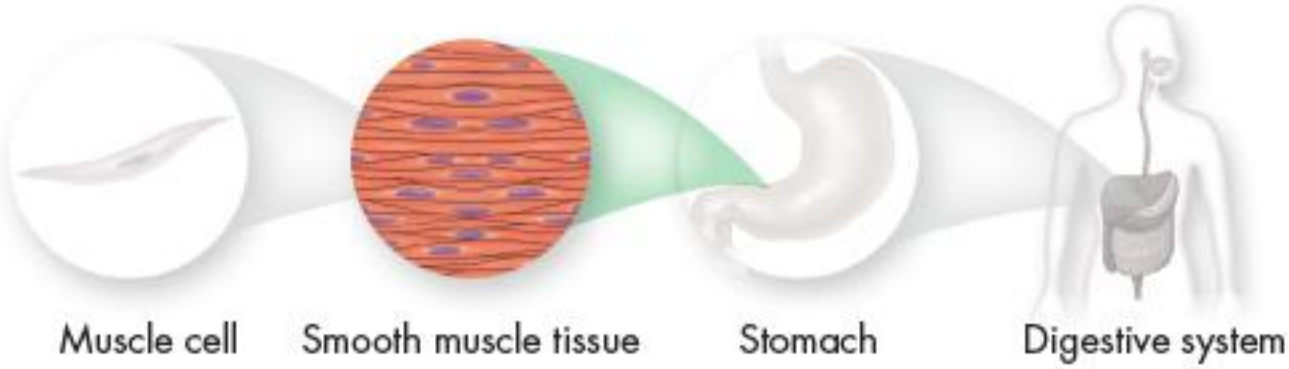
Levels of Organization

The specialized cells of multicellular organisms are organized into tissues, then into organs, and finally into organ systems.



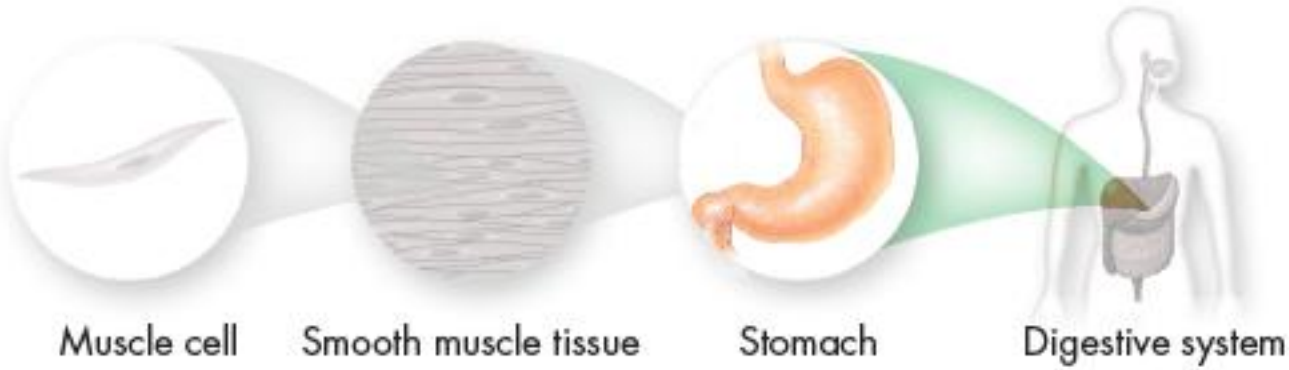
Levels of Organization

A **tissue** is a group of similar cells that performs a particular function.



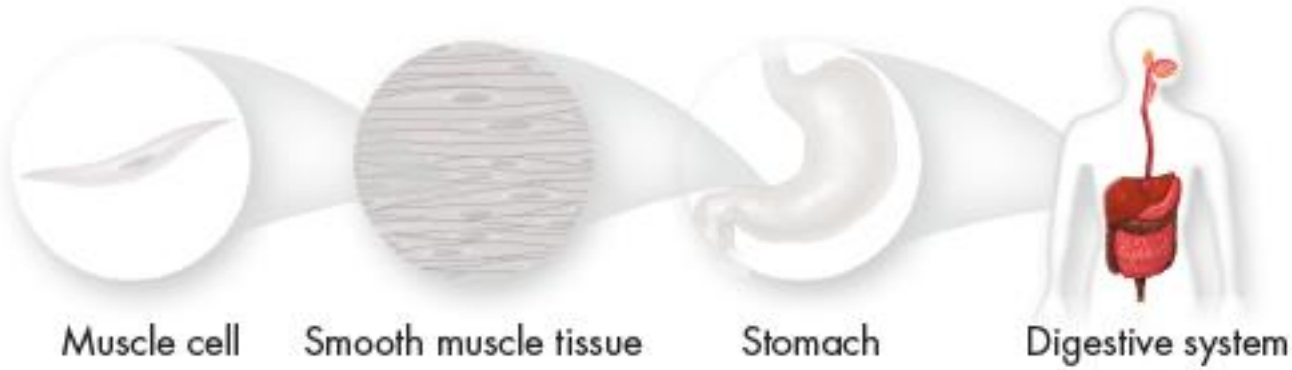
Levels of Organization

To perform complicated tasks, many groups of tissues work together as an **organ**.



Levels of Organization

A group of organs that work together to perform a specific function is called an **organ system.**



Cellular Communication

Cells in a large organism communicate by means of chemical signals that are passed from one cell to another.

Cellular Communication

Some cells form connections, or cellular junctions, to neighboring cells.

Some junctions hold cells firmly together.

Some junctions speed communication between the joined cells.

- receptor = molecule that binds to specific chemical messengers